Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	)	
	)	
Inquiry Concerning Deployment of	)	
Advanced Telecommunications	)	
Capability to All Americans in a	)	CC Docket No. 98-146
Reasonable and Timely Fashion,	)	
And Possible Steps To Accelerate Such	)	
Deployment Pursuant to Section 706 of	)	
The Telecommunications Act of 1996	)	

Comments

The National Exchange Carrier Association, Inc. (NECA) submits these comments in response to the Federal Communications Commission *Notice* in the above-captioned matter.[1] In this *Notice*,[2] the Commission asks, generally, whether advanced telecommunications capability (ATC)[3] is being deployed in a "reasonable and timely"

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[1] *See* Inquiry Concerning Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable And Timely Fashion, and Possible Steps To Accelerate Such Deployment Pursuant To Section 706 of the Telecommunications Act of 1996, CC Docket No. 98-146, *Notice of Inquiry*, FCC 00-57, rel. Feb. 18, 2000 (*Notice* or *NOI*).

[2] In October, 1999, the Commission conducted its first inquiry on advanced services, and concluded that overall deployment of these services generally was proceeding reasonably and on a timely basis. *See* Local Competition & Broadband Reporting, CC Docket 99-301, *Notice of Proposed Rulemaking*, 14 FCC Rcd 18100 (1999) (*Data Gathering Proceeding*). The instant proceeding is the second such inquiry conducted by the Commission. *See Notice* at ¶ 4.

[3] The Commission defines ATC "as having the capability of supporting, in both the provider-to-consumer (downstream) and the consumer-to-provider (upstream) direction, a speed (in technical terms, 'bandwidth') in excess of 200 kilobits per second (kbps) in the last mile." *See Notice* at ¶¶ 8-9, note omitted.

manner. The Commission also seeks information, generally, regarding whether advanced services are being deployed to all Americans, and, if not, who is not receiving such services; how many subscribers are being served in areas where advanced services have been deployed; and basic economic conditions of the residential broadband market, such as the level of competition expected to develop in varying geographic areas (e.g., areas with low population density vs. those with high density.)[4]

I. "Reasonable and Timely" Deployment of ATC in Rural Areas Will Differ Depending on Serving Area Characteristics

However the Commission ultimately defines "reasonable and timely" ATC deployment, it is likely that ATC growth in rural areas, generally, will lag behind that of urban and suburban areas. Information currently available to NECA about ATC deployment among its traffic sensitive pool members suggests varying levels of deployment of ATC among small rural local exchange carriers (LECs), as shown below.

Not surprisingly, differences in growth rates of ATC deployment occur because of differing characteristics among small rural local exchange carriers' (LECs) serving areas. They are often as different from one another as is a small rural LEC area from a large urban one. All rural LECs, however, face three "graphic" challenges: topographic, geographic, and demographic. Combinations of these factors cause variability among areas served by rural LECs.

Topography has always challenged the creativity and determination of small rural LECs in providing dial tone for basic voice services. For example, ordinary local

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[4] *Notice* at ¶ 5.

exchange service in the Alaska bush often means transmitting calls via satellite, while connecting two subscribers in rural Nevada or Utah may necessitate running loops from a central office for sixty miles or more. Another rural carrier in Nebraska or the Dakotas may find that the optimum solution for dial tone to some of its customers is basic exchange telephone radio service (BETRS), while a small LEC in Vermont may find a very different technological solution. Topography will affect ATC growth as surely as it affects voice service penetration.

Geographic location is a factor that influences network deployment and service offering decisions (including ATC) in rural areas more significantly than in urban (or rural) areas served by large companies. For example, a small rural LEC's location relative to other local service providers (or Internet service providers), and its ability to connect with the networks of interstate long distance providers, are major considerations. *Rural Telecommunications* Magazine reports that some small LECs are forming strategic alliances with other companies for technological solutions and to keep costs down.[5] "(D)oylestown Telephone is among the members of ... a consortium of rural telcos that provide service throughout Ohio. ... The partnership has helped Doylestown mitigate the cost of providing SDSL."[6] But Doylestown reports that price is still an obstacle to wider

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[5] *See Rural Telecommunications*, "Faster Than a Speeding Byte: Delivering Broadband to Rural America," Jennifer Mayne, NTCA, January/February 2000. (NTCA)

[6] *Id.*

deployment. The high cost of connection to the Internet backbone limits the company's ability to offer lower prices for dedicated bandwidth.[7]

Demography, or customer density / customer mix, is one of the greatest distinctions between rural and urban / suburban LECs, but also varies widely among rural LECs themselves. NECA's recently published *Access Market Survey* results show that 52% of NECA traffic sensitive pool members responding serve over 200 square miles. The majority of NECA's traffic sensitive companies (56 percent) serve customer bases of 2500 or fewer lines. *AMS* results also show that these small companies have installed more than 4900 central office switches, serving 5.8 million customers.[8] Thus, each switch, on average, handles the voice communications of approximately 1200 customers. An urban LEC switch might handle tens or even hundreds of thousands of customers.

For the smallest LECs, the contrast in subscriber density is even greater. A Rural Task Force (RTF) white paper states, for example, that

> population density in rural carrier service areas in the Rocky Mountain West is less than four persons per square mile. In Alaska, rural carriers serve approximately 234,000 access lines in an area with an average 0.58 persons per square mile. In ten more Western states, plus Maine, population density is between four and 14 persons per square mile in rural carrier service area[s]. At the high end of the scale, in eleven Eastern states population density in rural carrier service areas ranges from 57 to 280 persons per square mile.[9]

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[7] *Id.*

[8] *See* National Exchange Carrier Association, Inc. *Access Market Survey of NECA's Traffic Sensitive Pool Members*, 1999 (*AMS*).

[9] *See The Rural Difference*, White Paper 2, Rural Task Force, Jan., 2000,

Some large rural LECs have substantial business customer bases that create initial demand for broadband services, which helps speed residential deployment of ATC. But small rural carriers' business customer bases comprise almost exclusively "mom-and-pop" enterprises that will be slower to request ATC.

> In addition to experiencing higher costs associated with serving a widely dispersed population base, Rural Carriers tend to obtain their revenue streams in a very different manner [from] larger non-Rural carriers. Most Rural Carriers serve primarily residential and very small business customers. Rarely are there large business customers present in rural areas. In areas where a large business customer is present, that single customer can account for a disproportionate share of the Rural Carrier's business. Competitive loss of that single customer could have a severe detrimental impact on the Rural Carrier's business, and the rates of remaining customers. [10]

II. The Commission Must Provide Adequate Support to High-Cost Areas if It Wishes to Encourage Ubiquitous ATC Deployment

While rural LEC serving area characteristics vary widely, a key to ATC growth in *all* of rural America will be the availability of adequate universal service funding to those small rural LEC areas for which ATC deployment is simply not economically feasible.

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http://www.wutc.wa.gov/rtf at p.19-20 (*RTF*). "Nationally the population density in areas served by Rural Carriers is only about 13 persons per square mile. This compares to a national average population density of 105 persons per square mile in areas served by non-Rural Carriers."

[10] *RTF* at 30.

To the extent the Commission decides that ATC should be provided to all Americans, it should provide sufficient universal service support for these services.[11]

The same challenges that face LECs in providing rural *voice* telephony will influence the development of ATC in rural America. In particular, the characteristics of the loop, or "last mile," affect ATC deployment decisions for all carriers. It is there that small, rural carriers face the greatest deployment obstacles. The majority of customers in rural areas live great distances from one another, and from telephone company central offices. Providing reliable voice service in these areas requires long loop lengths and placement of additional transmission equipment (e.g., repeaters), or digital loop carrier systems to provide quality voice communications to remote areas. As distance between the customer and the central office increases, cost also increases.

Successful deployment of ATC depends in part on whether a small LEC can defray the high cost of upgrading plant. Local networks, built to handle voice frequencies, usually must be upgraded to handle data transmissions in loops beyond 18 kilofeet (approximately 3 miles) from a central office. Devices such as repeaters, load coils, and line concentrators, designed to improve *voice* transmission over long loop

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[11] RTF points out that "(T)he 1996 Act ...was clear [in] that consumers in all regions of the Nation, including low-income consumers and those in rural, insular and high cost areas, should have reasonably comparable access to advanced services. ... The Task Force believes that this means ensuring that all communities have affordable access to currently available supported services (keeping in mind that the list of supported services will evolve over time), and providing the foundation for the ubiquitous availability of cost-efficient advanced services capability. This support, made available on a competitively neutral basis, provides the foundation for telecommunications investment directed to high-cost rural communities, by both incumbents and new entrants. *RTF* at 62.

lengths, actually impede *data* transmission. Thus, the same high quality network components installed to provide voice services in rural areas may not work well in all circumstances for data transmission. The cost to "condition" these loops for broadband service can be very high.[12] But the cost recovery risk to most small rural companies, to implement these upgrades, is much higher than it is to larger companies serving rural or urban areas.

Most companies in high cost areas rely on universal service support to recover basic loop cost for voice services.[13] Lacking this support, voice service in high cost areas might not be of comparable quality to that provided in non-rural areas. Without some mechanism to defray the cost of installing new plant for ATC, or upgrading existing plant, rural carriers will not likely be able to deploy ATC in high cost areas at all.

Carriers are particularly concerned about the regulatory risk associated with deployment of ATC in high cost areas. Under the Commission's current high cost rules, carriers currently experience significant shortfalls in universal service cost recovery for basic *voice* services as a result of the "interim" cap on universal service funding.[14] Recent

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[12] The cost of load coil removal alone, for example, has been estimated to be as high as $1,400 per loop by Bell Atlantic. *See* Proceeding on Motion of the Commission to Examine New York Telephone Company's Rates for Unbundled Network Elements, *Opinion and Order Concerning DSL Charges*, NY Public Service Commission, Case 98-C-1357, Opinion No.99-12 at Appendix B (Dec. 17, 1999). For small rural companies providing service to isolated customers in a large service territory, per-loop costs would likely be much higher.

[13] "Rural Carriers are much more dependent on access charges and universal service support revenues than are non-Rural Carriers." *RTF* at 30.

[14] *See* Amendment of Part 36 of the Commissions Rule's and Establishment of a Joint

data provided by NECA to the Commission reveal a shortfall of $130 million in 2000 alone as a result of the cap.[15] Even greater uncertainty clouds prospects for future recovery of costs in rural high cost areas, as the Commission considers ways to replace current actual-cost funding mechanisms with proxy-based models for rural carriers.

As a result, rural high cost companies are currently challenged to maintain and improve their local networks for basic voice-grade services. Unless the Commission provides clear assurances of the ability to recover fully the costs of loop upgrades for broadband services, these rural carriers are unlikely to accept the associated risk.

The Commission must resolve the universal service dilemma facing many small carriers now. Until the cap is removed, deployment of ATC by these carriers is more likely to be delayed, because of uncertainty over basic loop-cost recovery. Ironically, the cap creates this uncertainty in the very areas most likely to be found on the wrong side of the "digital divide." Providing full funding to the existing universal service program is, therefore, a critical first step to ubiquitous broadband deployment.

Board, *Report and Order*, 9 FCC Rcd 303 (1994)(*Interim Cap Order*).

[15] *See* Federal-State Joint Board on Universal Service: Promoting Deployment and Subscribership in Unserved and Underserved Areas, Including Tribal and Insular Areas, CC Docket No. 96-45, *Further Notice of Proposed Rulemaking*, 64 Fed. Reg. 52738 (1999), Joint Comments of United States Telecom, and National Exchange Carrier Association, Inc., filed Dec. 17, 1999 at 4. "In 1994, for example, payment shortfalls associated with the cap amounted to about $36 million dollars, or less than 4% of the high cost fund revenue requirements. In the year 2000, six years after the "interim" cap was imposed, payment shortfalls are expected to total nearly $133 million dollars, almost 13% of total fund requirements. In all, payment shortfalls caused by the interim cap since 1994 have totaled over $350 million. These continuing shortfalls are inconsistent with the requirements of the [Telecommunications] Act for "specific, predictable and sufficient" universal service funding."

III. The Commission Should Not Impose Unnecessary Additional Reporting Burdens on Small Rural Carriers, and Should Not Prescribe A Single Broadband Solution

NECA encourages the Commission to carefully monitor and foster the deployment of ATC, under its mandate from Congress.[16] As shown, many small, rural carriers are presently deploying broadband services, and many more are considering such service offering upgrades. To ensure that this trend continues, the Commission should not create unnecessary regulations or reporting requirements with respect to advanced services, that might actually retard the rate of deployment. If the Commission were to require regular direct reports from small rural LECs, time and resources expended on compliance with such a requirement might actually hinder these carriers' efforts to deploy ATC. To the extent possible, therefore, the Commission should rely on existing data sources to efficiently monitor ATC growth. For example, a potentially useful source is NECA's FCC Tariff No. 4. Tariff 4 is a storehouse of billing information, and contains many of the technical capabilities of local telephone company central offices, nationwide, as well as those of many competitive local exchange carriers. NECA publishes its *Access Market Survey* (discussed above) biennially, providing a great amount of detail about service deployment and levels of central office technology among NECA's traffic sensitive pool members. Other data-gathering alternatives are also available to the Commission, such as the excellent work being done by the Rural Task Force.

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[16] *See* § 706 of the 1996 Telecommunications Act; § 706, Pub. L. 104-104, Title VII, Feb. 8, 1996, 110 Stat.153, reproduced in the notes under 47 § 157.

The Commission should be mindful, also, that technological progress will always outpace regulation. Broadband services such as Asynchronous Transfer Mode (ATM), Frame Relay, Synchronous Digital Hierarchy / Synchronous Optical Network (SDH / SONET), and DSL technologies offer carriers flexibility in designing and improving infrastructure necessary to meet unique customer requirements.[17] As additional potential tariff offerings, NECA is also investigating other forms of DSL, such as long-loop DSL. Although long-loop DSL is a slower-speed form of DSL (128 Kbps), this technology is currently the only long-loop DSL broadband solution available to the LEC industry.

But technologies and technical standards will evolve. The Commission should not specify one technology, therefore, as a solution for all broadband needs. Instead, the Commission should focus on encouraging the interconnection between large carrier broadband networks and rural broadband networks. If rural markets are to be fully connected to national broadband networks, full access is necessary to the network systems of interexchange carriers, network service providers, and other local service providers.

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[17] For example, NECA has developed and filed three different DSL tariff offerings on behalf of its tariff participants, to meet various customer demands. These include Asymmetric DSL (ADSL) for residential subscribers, providing up to 512 kbps upstream and 1.54 Mbps downstream; Symmetric DSL (SDSL) Voice/Data at 768 kbps for home / small office users; and SDSL Data Only providing 768 kbps. In addition to the companies mentioned above that are offering DSL, 93 additional companies are in the planning stage for DSL. The *AMS* also shows that 124 companies in 30 states have deployed Frame Relay, with 41 more in planning stages. ATM has been deployed by 69 NECA traffic sensitive pool members and 65 more are planning deployment.

IV. Conclusion

In summary, the challenges faced by small, rural LECs in deploying ATC service include higher deployment costs of serving small customer bases over large geographic areas; evolving network standards; and continued regulatory uncertainty. Despite these risks, where possible, these companies are diligently working to provide the right solutions to their customers' growing needs. As the Commission moves ahead in this proceeding, it must keep in mind the special circumstances of small rural companies for which deployment of ATC is not yet economically feasible. To assure availability of ATC to all Americans, universal service support for deployment of advanced services must be available, and fully-funded, for high-cost areas.

Respectfully submitted,

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